REMARKS

Claims 1-24 remain in this application.

Claim Rejections

In the present Action, claims 1-24 have been rejected as anticipated or obvious in light of several cited references. For the reasons set forth below, Applicant respectfully submits that this is in error.

In the present Action, independent claim 1 has been rejected as anticipated by U.S. Pat. No. 6,078,681 to Silver ("Silver"). In independent claim 1 Applicant claims, among other things, "a database that includes one or more pathology profiles associated with one or more pathologies, the one or more pathology profiles derived from images of one or more other biological specimens having one or more pathologies." The present Action asserts that this limitation is anticipated by Silver at column 7, lines 11-24 and column 15, lines 50-62. Applicant respectfully disagrees. The cited discussion in Silver discloses that visual and point emissive data for an activity under study may be stored in a signature library for later study and for comparison with new activity data. (Silver, col. 7, lines 11-24 ("During operation, the image processor produces signatures for an activity under study, retrieves signatures from the signature library, and compares the signatures of the activity under study to the signatures stored in the signature library. If there is a match, correspondence, or correlation between the signature under study and one or more signatures stored in the library, the image processor can transmit information about such a correlation to the display unit in real-time.").) Silver also states that applications of its system may include "distant evaluation for tissues and samples studies for diagnostic pathology studies and other practices of telemedicine." (Silver, col. 15, lines 50-62.) Silver does not, however, disclose or suggest profiles that are associated with pathologies, or deriving pathology profiles from specimens having one or more pathologies. Thus, Silver does

not disclose or suggest one or more pathology profiles derived from images of one or more other biological specimens having one or more pathologies, or a database that includes one or more pathology profiles associated with one or more pathologies, and for at least this reason cannot anticipate the invention claimed in claim 1.

Because claim 1 is patentable, for at least this claims 2-9, which contain additional limitations and depend (directly or indirectly) from claim 1, are also patentable, and Applicant respectfully submits that the rejections of those claims in the present Action are in error.

The present Action asserts that independent claim 19 is anticipated by Silver for the same reasons as stated for claim 1. Applicant respectfully disagrees. In addition to the reasons set forth above in connection with claim 1, claim 19 includes additional limitations that are not disclosed or suggested by Silver and are not discussed in the present Action. Among other things, Claim 19 recites "providing a database that includes one or more pathology profiles associated with one or more pathologies, the pathology profile for each pathology including a shape, a texture, and an area for one or more images of biological specimens that carry the pathology." Silver does not teach or suggest this limitation, and for at least this additional reason cannot anticipate the invention claimed in claim 19.

Because claim 10 is patentable, for at least this claims 20-24, which contain additional limitations and depend (directly or indirectly) from claim 19, are also patentable, and Applicant respectfully submits that the rejections of those claims in the present Action are in error.

In the present Action, independent claims 10, 17, and 18 have been rejected as unpatentable over U.S. Pat. No. 5,991,028 to Cabib et al. ("Cabib") in view of U.S. Pat. No. 6,103,466 to Grobet, *et al.* ("Grobet"). For the reasons set forth below, Applicant submits this is in error.

10

In independent claim 10 Applicant claims, among other things, "providing a database

that includes one or more pathology profiles associated with one or more cells having one or

more pathologies." The present Action asserts that this is disclosed in Cabib at column 22, lines

29-32. Applicant respectfully submits this is incorrect. At the cited portion, Cabib discusses the

shortcomings of transmission microscopy. (Cabib, col. 22, lines 29-32 ("Light microscopy is

one of the most fundamental techniques for the visualization of cells and tissues in biology and

pathology. Transmission microscopy suffers greatly from the inherently low contrast of cell

organelles and structural details.").) This is not a disclosure or suggestion of "providing a

database that includes one or more pathology profiles associated with one or more cells having

one or more pathologies." Similarly, Cabib (alone or in combination with Grobet) does not

disclose "the pathology profile for each pathology including a shape measure derived from a

shape of one or more cells associated with the pathology." The present Action suggests this may

be found at Cabib, col. 23, lines 38-41, but Cabib there discusses spectral imaging as an

improvement to "the quantitative measurement of size, shape and textural features of cell organs,

cells and tissues." (Cabib, col. 23, lines 38-41 (with full portion of cited sentence: "Spectral

imaging applied to transmission light microscopy can greatly improve the quantitative

measurement of size, shape and textural features of cell organs, cells and tissues. This technique

is known as morphometry, which is a rapidly growing field in biology and pathology.").) This is

not a suggestion or disclosure (alone or in combination with Grobet) of the claimed pathology

profile. Nor does Cabib disclose or suggest (alone or in combination with Grobet) "a texture

measure derived from a texture of the one or more cells associated with the pathology, and an

area measure derived from an area of the one or more cells associated with the pathology." For

this limitation, the present Action again cites column 23, lines 38-41, which contain no

disclosure or suggestion of the claimed derived texture measure or derived area measure.

Applicant respectfully submits that, for at least these reasons, Cabib, either alone or in combination with Grobet, does not render obvious the invention claimed in claim 10.

The present Action also states that Cabib "is silent about the specific details regarding the steps of: processing the received image to obtain a query vector that includes a shape measure of the cell in the received image, a texture measure of the cell in the received image, and an area of the cell in the received image; and comparing the query vector to the one or more pathology profiles in the database to obtain a quantitative measure of similarity between the cell in the received image and one of the one or more cells having one or more pathologies." The Action asserts that "[i]n the same field of endeavor (medical image), however, Grobet discloses double-muscling in mammals comprising the steps of: processing the received image to obtain a query vector that includes a shape measure of the cell in the received image, a texture measure of the cell in the received image, and an area of the cell in the received image (column 13, lines 55-58); and comparing the query vector to the one or more pathology profiles in the database to obtain a quantitative measure of similarity between the cell in the received image and one of the one or more cells having one or more pathologies (column 13, lines 55-58)." Applicant respectfully submits this is in error. Grobet concerns double-muscling and determining the presence of muscular hyperplasia by a method including DNA sequencing. (Grobet, at Abstract ("It has been shown that cattle of the Belgian Blue breed homozygous for the mutant gene lacking myostatin activity are double muscled. A method for determining the presence of muscular hyperplasia in a mammal is described. The method includes obtaining a sample of material containing DNA from the mammal and ascertaining whether" certain DNA sequences are present).) The portion of Grobet cited by the present Action does not discuss processing a received image to obtain a query vector that includes a shape measure of the cell in the received image, a texture measure of the cell in the received image, and an area of the cell in the received

image, but instead concerns gene mapping using "segregation vectors" of "query markers":

"Segregation vectors of the query markers were compared with the vectors from all markers in the region of interest in the complete Data Release 11.9 (May 1997) to obtain a more precise position." (Grobet, col. 13, lines 55-58.) Applicant respectfully submits that this is not a disclosure or suggestion, either alone or in combination with Cabib, of the claimed "processing the received image to obtain a query vector that includes a shape measure of the cell in the received image, a texture measure of the cell in the received image, and an area of the cell in the received image." Nor does this same disclosure in Grobet (as suggested by the citation in the present Action) disclose or suggest, alone or in combination with Cabib, the claimed "comparing the query vector to the one or more pathology profiles in the database to obtain a quantitative measure of similarity between the cell in the received image and one of the one or more cells having one or more pathologies." Further, as noted above, Grobet is concerned with double-muscling and determining whether certain DNA sequences are present (e.g., Grobet, at Abstract). Grobet is not, as the present Action asserts, a disclosure concerning medical imaging, and one of ordinary skill in the art would have no motivation to combine these references to make the claimed invention. Applicant respectfully submits that the present rejection is an improper attempt to reconstruct through hindsight Applicant's invention. Applicant respectfully submits that, for at least these additional reasons, Cabib and Grobet do not render obvious the invention claimed in claim 10.

Because claim 10 is patentable, for at least this claims 11-16, which contain additional limitations and depend (directly or indirectly) from claim 10, are also patentable, and Applicant respectfully submits that the rejections of those claims in the present Action are in error.

The present Action asserts that "[c]laims 17 and 18 are similarly analyzed as claim 10." Applicant respectfully submits that they are not rendered obvious by Cabib and Grobet for the same reasons discussed above.

Applicant believes pending claims 1-24 are in immediate condition for allowance. If any issues remain, Applicant invites a telephone call and/or Examiner Interview to the below signed attorney to discuss such remaining issues.

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Enclosed is a three month petition for extension of time and payment thereof. Applicant believes no further fees are due with this response. However, if any further fees are due, please charge our Deposit Account No. 18-1945, under Order No. UMNJ-P01-001 from which the undersigned is authorized to draw.

Dated: July 8, 2005   Respectfully submitted,

By _____
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